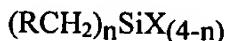


the hydrolysis and condensation polymerization of an organosilane containing an alkyl group substituted in the position β to silicon, the organosilane having the general formula:



where n is 1 or 2;

C
X is a halogen selected from the group consisting of chlorine, bromine, fluorine, and iodine; or an alkoxy selected from the group consisting of methoxy, ethoxy and propoxy substituents; and

R is an alkyl group having at least one but not more than two substituents in the position β to silicon that are electronegative; and wherein said siloxane polymer contains silanol groups.

3. (Amended) A photo and thermally labile siloxane polymer which undergoes transformation to SiO_2 -rich films by the elimination of β -substituted alkyl groups, obtained from the hydrolysis and condensation polymerization of an organosilane containing a β -substituted alkyl group, the organosilane having the general formula:



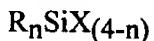
where n is 1 or 2;

C
X is a halogen selected from the group consisting of chlorine, bromine, fluorine, and iodine; or an alkoxy selected from the group consisting of methoxy, ethoxy and propoxy substituents; and

R is an alkyl group having at least one but not more than two β -substituents that are electronegative and at least one but not more than two α -substituents on the β -substituted alkyl group, the α -substituent being selected from the group consisting of chlorine, bromine, fluorine, iodine, hydroxy, methoxy, ethoxy, and acetoxy; and wherein said siloxane contains silanol groups

6. (Amended) A photo and thermally labile siloxane polymer which undergoes transformation to SiO_2 -rich films by the elimination of β -substituted alkyl groups, obtained from

the hydrolysis and condensation polymerization of an organosilane containing a β -substituted alkyl group, the organosilane having the general formula:



where n is 1;

X is a halogen selected from the group consisting of chlorine and bromine, or an alkoxy selected from the group consisting of methoxy and ethoxy substituents; and

C3
R is an ethyl group having at least one but not more than two β -substituents selected from the group consisting of bromine, fluorine, methoxy, and acetoxy and at least one but not more than two α -substituents on the β -substituted ethyl group, the α -substituent being selected from the group consisting of chlorine, bromine, fluorine, hydroxy, methoxy, and acetoxy;

and wherein said siloxane polymer contains silanol groups

22. (Amended) A photo and thermally labile siloxane polymer of the structure $[ClCH_2CH_2SiO(OH)]_p[ClCH_2CH_2SiO_{1.5}]_q$, in which the ratio of $p:q$ is from 1:20 to 1:1.33, which undergoes transformation to SiO_2 -rich films by the elimination of β -substituted alkyl groups, obtained from the hydrolysis and condensation of an organosilane having the general formula:



C4
where n is 1 or 2, and wherein when $n = 1$, m is 0 or 1 and when $n = 2$, m is 0;

X is a halogen selected from the group consisting of chlorine, bromine, fluorine, and iodine; or an alkoxy selected from the group consisting of methoxy, ethoxy and propoxy substituents; and

R' is any substituted or unsubstituted alkyl group.

23. (Amended) A photo and thermally labile siloxane polymer which undergoes transformation to SiO_2 -rich films by the elimination of β -substituted alkyl groups, obtained from the hydrolysis and condensation polymerization of an organosilane containing an alkyl group substituted in the position β to silicon, the organosilane having the general formula: